

## Patent Claims

### Arc Evaporation Device

- 5 1. Arc evaporation device with a target (16, 49) forming a first pole such as a cathode, which is arranged in a housing (10) forming a second pole such as an anode, wherein the target is connected to a fastener (20) at least peripherally in an electrically conducting manner and wherein from the fastener (20) and/or the target (16) preferably several electrically conducting primary connections (38, 40, 76, 78) extend  
10 in the peripheral area of the target, which in turn are connected via an electrically conducting primary conductor (42, 72) leading to a power supply unit (18, 82) arranged outside the housing, with the housing being connected to said unit via at least one electrically conducting secondary connection (44, 46, 49, 53, 54, 84, 86), is characterized in that  
15 several electrically conducting secondary connections (46, 48, 52, 54, 84, 86) extend from the housing (10), which are connected among each other via an electrically conducting secondary conductor (44, 70, 74) and fix at least one envelope or at least a partial envelope, whose geometry corresponds to the envelope of the target (16, 49) and/or of envelopes formed by the electrically conducting primary connections  
20 (38, 40, 76, 78).
2. Arc evaporation device pursuant to Claim 1,  
is characterized in that  
the secondary envelope fixed by the electrically conducting secondary connections  
25 (46, 48, 52, 54, 84, 86) runs concentrically or roughly concentrically to the primary envelope fixed by the target (16) or by the third envelope fixed by the electrically conducting primary connections (38, 40, 76, 78).

3. Arc evaporation device pursuant to Claim 1 or 2,  
is characterized in that

the electrically conducting primary connections (38, 40, 76, 78) fix a first plane, that  
the electrically conducting secondary connections (46, 48, 52, 54, 84, 86) fix a second  
plane and that the first and second planes run parallel or roughly parallel to each  
other.

4. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that

the normal line extending from the center of the first and/or third envelope runs  
through the center or roughly the center of the second envelope.

5. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that

the electrically conducting secondary connections (46, 48, 52, 54, 84, 86) are  
connected outside the housing (10) to the power supply unit (18, 82) via a secondary  
conductor (44, 70, 74) designed as a ring, especially a closed ring.

6. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that

the preferably peripherally designed secondary conductor (44, 70, 72) preferably  
consists of copper or aluminum or contains it.

7. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that

the electrically conducting secondary connections (46, 48, 52, 54, 84, 86) preferably  
consist of brass or stainless steel.

8. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that

the electrically conducting secondary connections (44, 52, 54, 84, 86) extend from the outside of the housing and in particular are welded to it.

9. Arc evaporation device pursuant to at least Claim 1,

is characterized in that

the electrically conducting secondary connections (52, 54) comprise annular or sleeve-shaped elements (58, 60) with inside threads (62, 64), which are attached such as welded to an outer surface (56) of the housing (50), that connecting elements such as screw elements (66, 68) can be screwed into the inside threads and that between the annular or sleeve-shaped elements and the screw elements the secondary conductor (70) such as a ring conductor runs, which is in turn connected to the power supply unit (18, 82).

10. Arc evaporation device pursuant to at least Claim 1,

is characterized in that

the electrically conducting primary connections (38, 40) are connected outside the housing (10) to the power supply unit (18, 82) via the primary conductor (42) designed as a ring, especially a closed ring.

11. Arc evaporation device pursuant to at least Claim 1,

is characterized in that

the electrically conducting primary connections (38, 40) are directed such at the target (16) that the same or substantially the same impedance level prevails regardless of the position of the respective arc spot (44).

12. Arc evaporation device pursuant to at least Claim 1,

is characterized in that

a film consisting of electrically conducting material, especially a copper foil, is arranged between the target (16) and the fastener (20).

13. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that  
the preferably peripherally designed primary conductor (42) preferably consists of  
copper or aluminum or contains it.

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14. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that  
the electrically conducting primary connections leading to the fastener (20) and/or the  
target (16) are in particular screws or bolts (38, 40), which preferably consist of brass.

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15. Arc evaporation device pursuant to at least Claim 2,  
is characterized in that  
the third envelope fixed by the electrically conducting primary connections has the  
circumferential geometry of the target (16) and extends preferably coaxially thereto.

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16. Arc evaporation device pursuant to at least Claim 2,  
is characterized in that  
the third envelope fixed by the electrically conducting primary connections has a  
square geometry, wherein along each leg the distance (b, d) between the electrically  
conducting primary connections is the same or substantially the same.

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17. Arc evaporation device pursuant to at least Claim 1,  
is characterized in that  
the secondary envelope fixed by the electrically conducting secondary connections  
(84, 86) has a square geometry, wherein along each leg the distance (e, f) between  
the electrically conducting secondary connections is the same or substantially the  
same.

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